Cotton/Soybean Insect Newsletter

Volume 13, Issue #12 Edisto Research & Education Center in Blackville, SC 20 July 2018

Pest Patrol Alerts

The information contained herein each week is available via text alerts that direct users to online recordings. I will update the short message weekly for at least as long as the newsletter runs. After a new message is posted, a text message is sent to alert users that I have recorded a new update. Users can subscribe for text message alerts for my updates in two easy steps. Step one: register by texting **pestpat7** to 97063. Step two: reply to the confirmation text you receive by texting the letter "y" to complete your registration. Pest Patrol Alerts are sponsored by Syngenta.

Updates on Twitter

When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at @bugdocisin on Twitter.

News from Around the State

Our scouting workshop in Cameron, SC, Wednesday was a success. We had about 40 participants.

Mitch Binnarr, representative with Corteva Agriscience, reported that he was checking some cotton in Dillon and Marlboro Counties this week and observed aphids as still an issue, with treatments being made, stink bug injury in older cotton, with treatments being made, trap captures up for bollworm in southern NC, and bollworm eggs on bloom tags. Another report out of Hartsville indicated that bollworm egg activity was trending up in cotton. So, much activity is being reported from the northern portion of the Coastal Plain in SC this week. Mitch also took this shot of a brown stink bug on a small boll. **Tom Smith**, a local consultant, reported this dead deer near a cotton field he checked last week…nice buck…too bad…never know what you might find! Tom also reported more green stink bugs, plant bugs (although sporadic), leaffooted bugs, and bollworm activity in cotton (moths and eggs). He also added that aphids seem to be "diseasing out" in the crop.

Scouting Workshops (2nd one on 31 July!)

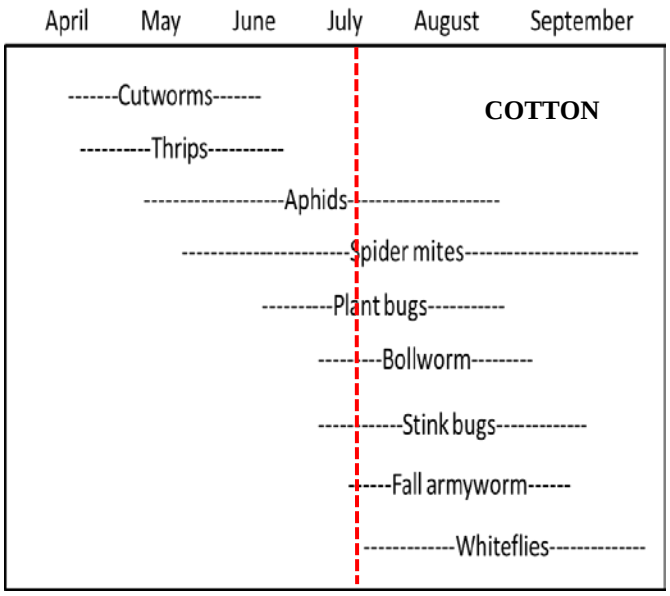
Your ag-focused county agents and I will be offering two more **in-field scouting workshops** for cotton and soybean insects this summer. The interactive workshops will be held:

1. ~~18 July in Cameron, SC~~ (was a big success, thanks to Jonathan Croft and Charles Davis)
2. 31 July in Lake City, SC (please RSVP with either Hannah Mikell [hmikell@clemson.edu or 803-435-8429] or Jacob Stokes [stokes3@clemson.edu], so we can plan for lunch)
3. 7 August at the Edisto REC near Blackville, SC (again, so we can plan for lunch, please RSVP with either me [greene4@clemson.edu], Mary Katherine Bamberg [mbamber@clemson.edu], Joe Varn [jvarn@clemson.edu], or Marion Barnes [jbrns@clemson.edu]).

The trainings will be free to attend, start in the morning, and end with lunch. Stay tuned for more information. Detailed information will be sent out as each training date approaches.

Cotton Situation

As of 15 July 2018, the USDA NASS South Carolina Statistical Office estimated that about 63% of the crop is squaring, compared with 49% the previous week, 67% at this time last year, and 68% for the 5-year average. About 21% of the crop is setting bolls, compared with 5% the previous week, 31% at this time last year, and 27% for the 5-year average. The condition of the crop was described as 13% excellent, 62% good, 23% fair, 2% poor, and 0% very poor. These are observed/perceived state-wide averages.



Cotton Insects

We still have plenty of aphids, but, hopefully, the fungus will start helping us on a widespread scale. However, many folks are still calling and texting about aphids, so the problem is certainly lingering. Spider mites could become an issue in some fields, particularly those that keep missing rains. So, don't forget your hand lens when you go scouting. At least look for the stippling on upper surfaces of leaves, but, as mentioned last week, you are a little late on noticing spider mites at that point.

Bollworm and stink bugs should be the focus for the remainder of the season. Counts of bollworm moths in our pheromone traps continue to increase, and folks are reporting eggs at 20-40 per 100 plants in some areas. Eggs were easy to see in some of my plots yesterday (Thursday), as were bollworm moths and tobacco budworm (TBW) moths. We caught a good many TBW moths in pheromone traps this past week, so some of the eggs could be from TBW. Because all Bt cotton provides a very high-dose strategy for controlling TBW in the crop, none of the eggs from TBW will survive. So, this is where the danger in spraying on eggs comes in…you might be treating for a high proportion of TBW eggs that will die due to the Bt toxins. There is no need to kill TBW twice! Without a reliable test kit for the eggs, we have to assume that some of the eggs are from TBW in the system. For example, using some very crude math and extrapolation, my traps caught about 1.4 times as many bollworm moths as TBW moths this past week. So, roughly, you could estimate that 1 out of 3 moths flying around was TBW. If TBW moths are in the system, it can complicate spraying for bollworm on eggs. We found this TBW moth resting yesterday (Thursday) in my plots. The best way

to scout for bollworm in cotton is to use all available ways to assess their density in the crop. Count eggs and pay attention to any pheromone trapping data in your area that might indicate proportions of TBW or bollworm. Eggs should be counted on the top 20% of the plant and around each bloom. Look for larvae in terminals, squares, blooms, on top of bolls under bloom tags, and on the sides of bolls. Look for injured squares, blooms, and bolls. Here is the language on scouting for bollworm in Bt cotton in SC:

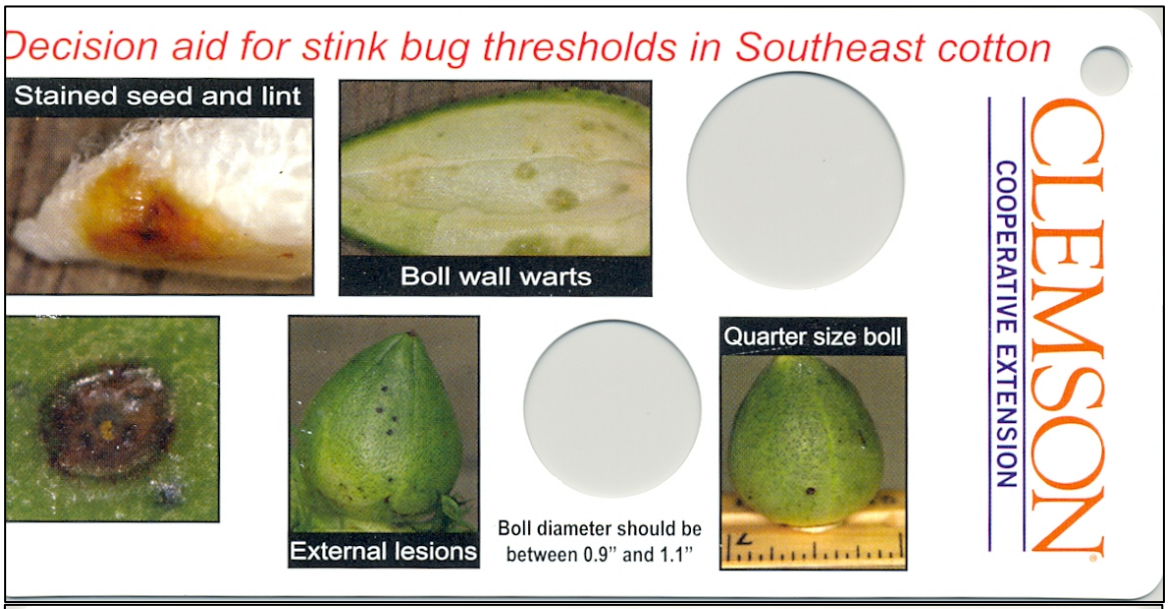
Bollworm (or TBW) eggs on square bracts

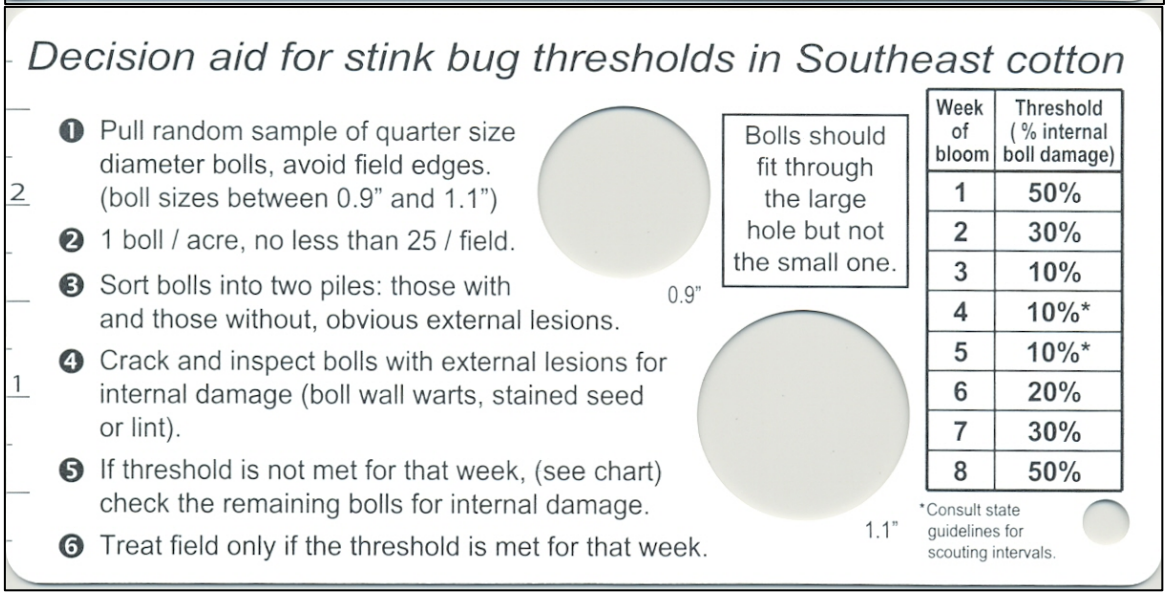
Bollworm in bloom

In transgenic cotton varieties that contain Bt endotoxins, an insecticide treatment should not be needed before first bloom. Transgenic Bt cotton varieties that have two or more Bt genes have increased efficacies against bollworms; however, under potential situations of very heavy pressure from bollworm, some Bt technologies can incur significant injury and losses if not protected with supplemental/timely application(s) of insecticide. To control escaped worms in Bt cotton, an insecticide treatment should be applied when 3 or more larger (>0.25 inch) worms are found per 100 plants or 5% of small bolls are damaged. Also, entire plants can be examined for eggs to determine pending pressure. Insecticide application can be justified if peak egg lay approaches 1 egg per plant. On each plant a scout should examine a white bloom, a pink bloom, and the two smallest bolls. If dried blooms (bloom tags) adhere to small bolls, remove them and look for larvae boring into the boll tips.

Bollworm feeding injury on boll tip (was under bloom tag)

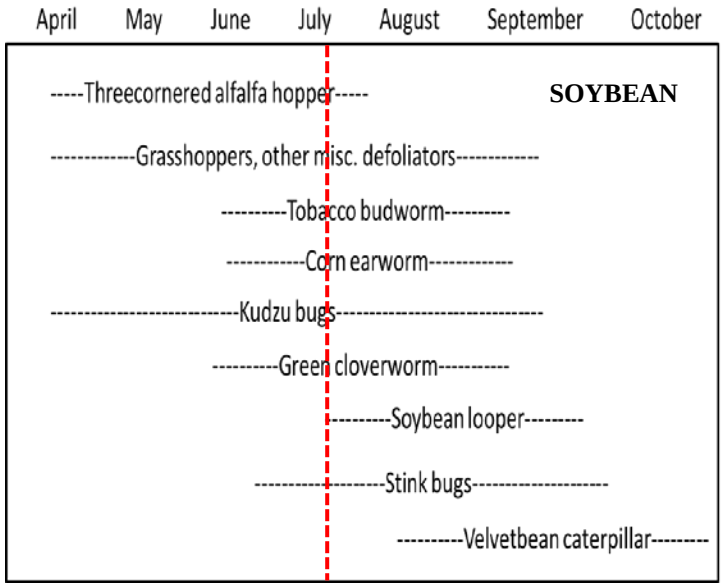
Stink bugs are fairly easy to find on drop-cloth counts right now in cotton that has been blooming for a couple of weeks. Boll damage assessments for stink bug injury should begin after you have seen blooms for a couple of weeks and have bolls with a diameter of about a quarter. Use our dynamic boll-injury threshold for stink bugs, but you have to know what week of bloom you are in to use it. We define the first week of bloom as when you have the initial flower on about every other plant. So, that would represent at least half of the plants with an initial bloom, and that is the first week of bloom – not the week you see the first bloom. After that point, all you need is a calendar to know the week of bloom, but you must know the first week! If you check correctly sized bolls each week, you look at fresh feeding injury and not old damage the remains in the boll once there. Looking at the same sized bolls each week will allow you to see the impact of insecticide use for stink bugs, as injury levels will decline after treatment. It takes a cotton boll about 2.5-3.0 weeks to reach full size and become resistant to feeding by stink bugs [Greene et al. 1999 – J. Econ. Entomol. 92(4): 941-944.]





Soybean Situation

As of 15 July 2018, the USDA NASS South Carolina Statistical Office estimated that about 95% of the crop has emerged, compared with 90% the previous week, 96% at this time last year, and 92% for the 5-year average. About 10% of the crop is blooming, compared with 5% the previous week, 26% at this time last year, and 20% for the 5-year average. The condition of the crop was described as 0% excellent, 63% good, 30% fair, 7% poor, and 0% very poor. These are observed/perceived state-wide averages.



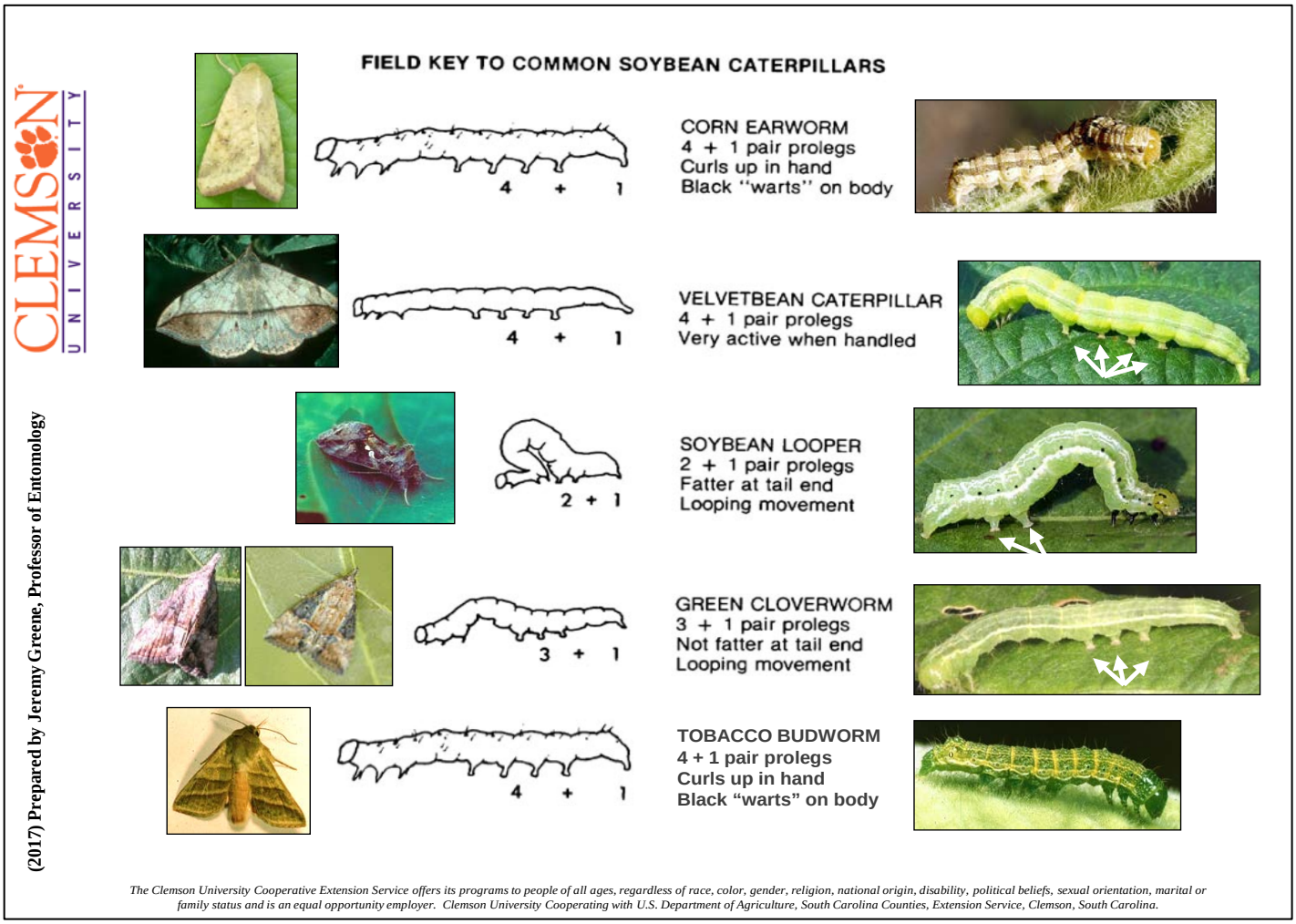
Soybean Insects

There are numerous species of insects in soybeans right now, but I have heard of no problems with any one species. However, this can change quickly. We have stink bugs and soybean loopers already in vegetative stage soybeans, both usually pests later in the season. If I am guessing, and I am just guessing, we will likely have a heavy year for insects in soybeans. Now is the time to become familiar with identification of the important species of caterpillars in soybeans. In addition to identifying the larvae, you need to be able to identify the moths, as those are flying around now in the crop. This is important because you can identify a potential problem well before it occurs. By noticing the species of moths present in the field, you almost have a "crystal ball" and can see into the future – well, you just know what eggs are being laid and what might be causing problems as they hatch and feed later. I have seen early populations of velvetbean caterpillars before as moths swarmed the field. I knew what was coming after the eggs hatched. You can do the same with soybean looper moths, green cloverworm, TBW, and podworm (same species as bollworm, corn earworm, tomato fruitworm, etc…many common names for *Helicoverpa zea* – some recent confusion on this). You also need to be able to identify the larvae because choice of insecticide depends on accurate identification of species. Pictorial key on next page.

Clarification of Insecticide Recommendations

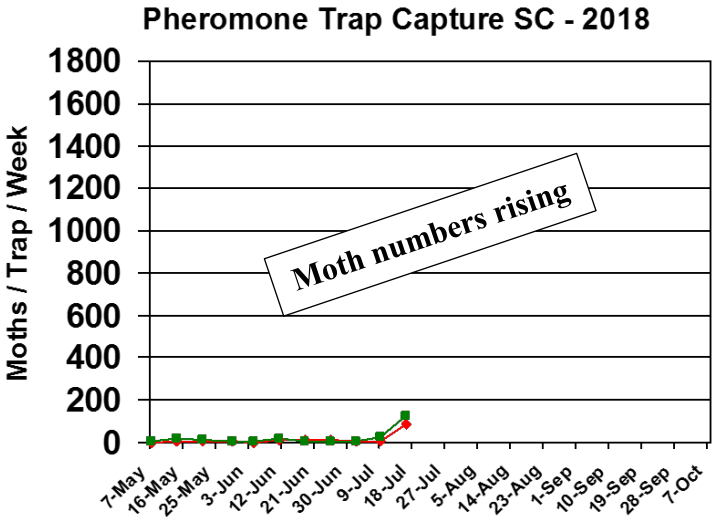
Very recently, I received a call and question about why other states recommended a certain product that we did not recommend here in SC. I notified the stakeholder that we have recommended that specific product ever since it was labeled. It happens to be a pre-mixed product with two active ingredients (AIs), and I informed the caller that the material has been listed in tables at the end of each major section for cotton or soybean insects in the handbook for as long as the product has been available. I put insecticides with multiple AIs in these sections because they do not fit well under sections for individual pests, as both AIs might not work on that specific insect. These products are recommended for blends of multiple pests exceeding thresholds that need to be controlled. For example, Endigo is a pre-mixed product listed in this section. This product has two AIs (thiamethoxam and *lambda*-cyhalothrin), and each AI provides

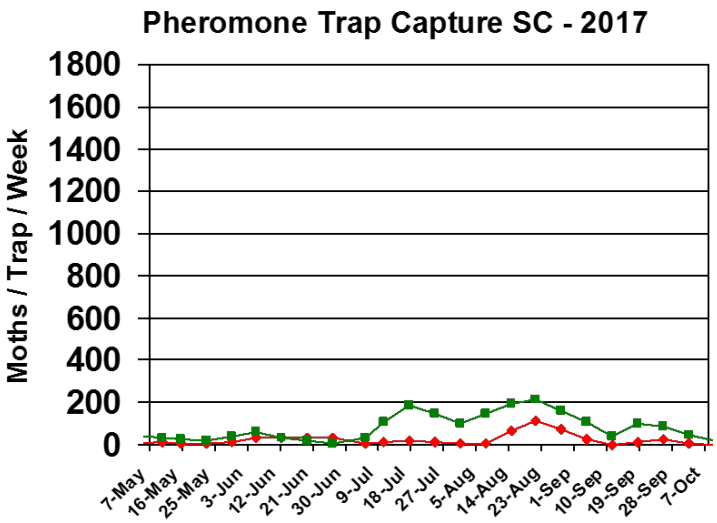
control of certain groups of insects. Thiamethoxam (same AI as in Centric and Cruiser) is active on smaller piercing-sucking insects, such as aphids, plant bugs, and some others, while *lambda*-cyhalothrin (same AI as in formulations of Karate, Warrior, etc.) is active on bollworm, stink bugs, cutworms, etc. So, you can see why listing a fantastic product like Endigo in sections for individual pests is problematic, without a lot of notation indicating the limitations. Pre-mixed products should not be used for individual pests, unless both AIs are active on that pest. If you had large populations of aphids, had threshold numbers of stink bugs, were getting close to threshold on plant bugs, and had some bollworms escaping the Bt toxins, Endigo would be a perfect choice for addressing these multiple pests in cotton. It would not be good choice for just going after aphids in cotton. That is why it and other pre-mixed products are not listed in sections for individual pests. Please do not overlook these tables at the end of the recommendations for cotton or soybean insects in the Pest Management Handbook. There are some very good products listed here, but they should be used to control multiple pests exceeding thresholds. In those sections, I list many different pests controlled by the insecticides listed there, but I will make adjustments in the future that will make it clear what pests can be targeted with each material listed.



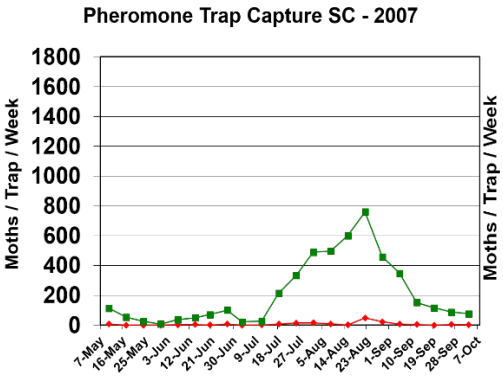
Bollworm & Tobacco Budworm

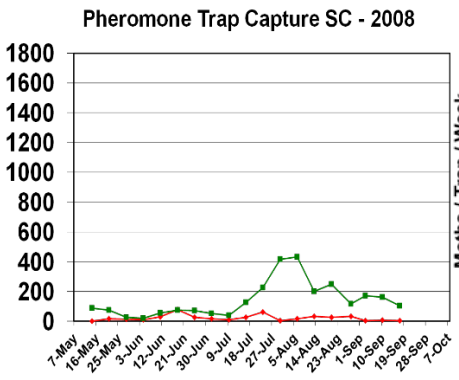
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2017 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state.

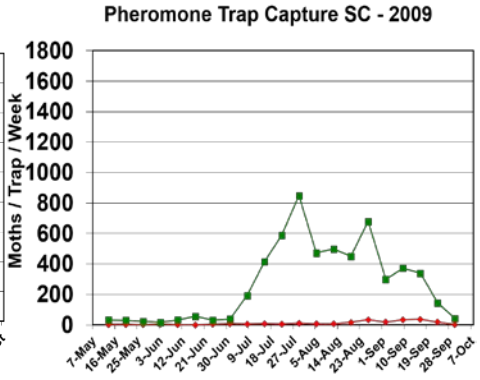


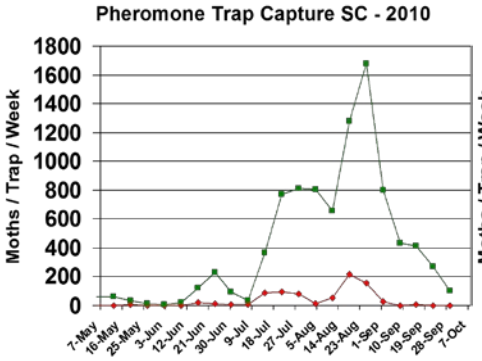


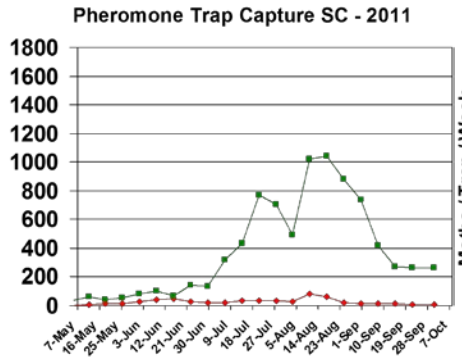
Trap data from 2007-2016 are shown below for reference to other years of trapping data from EREC:

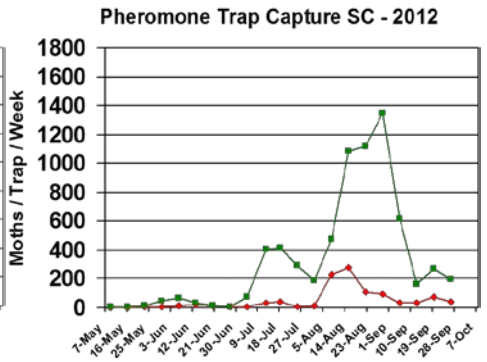


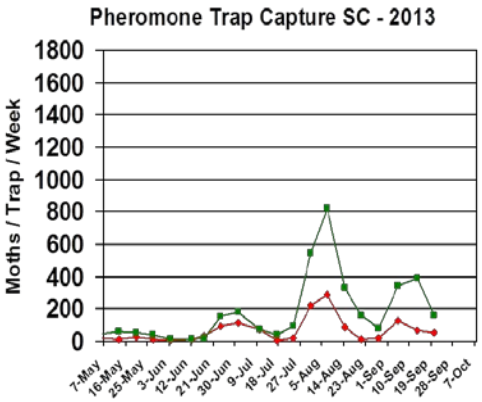


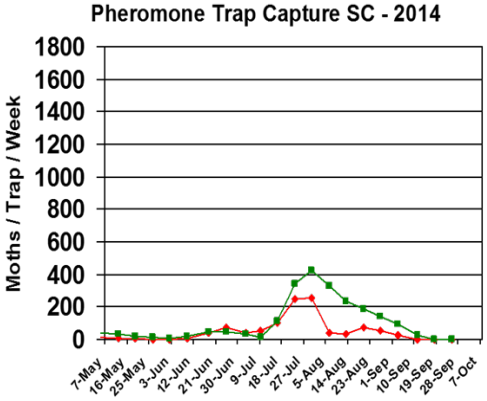


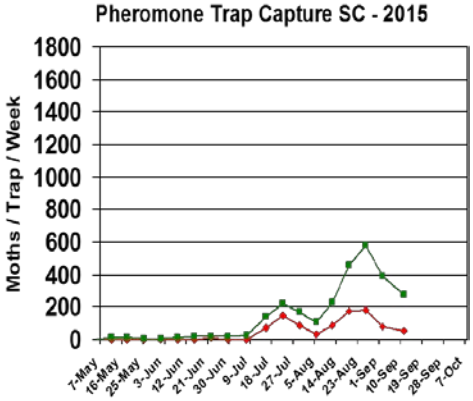


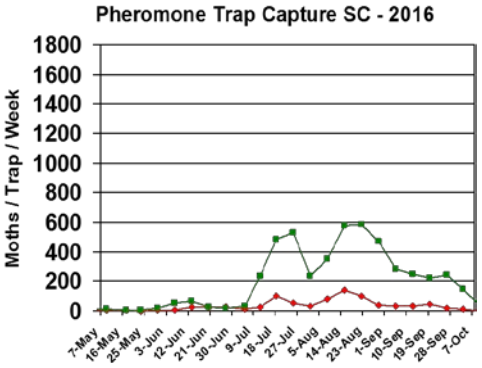








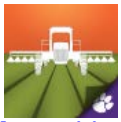




Pest Management Handbook – 2018

Insect control recommendations are available online in the 2018 South Carolina Pest Management Handbook at: http://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html

Free Mobile Apps: "Calibrate My Sprayer" and "Mix My Sprayer"



Download our free mobile apps called "Calibrate My Sprayer" and "Mix My Sprayer" that help check for proper calibration of spraying equipment and help you with mixing user-defined pesticides, respectively, in custom units (available in both iOS and Android formats):
http://www.clemson.edu/extension/mobile-apps/

Need More Information?

For more Clemson University Extension information: http://www.clemson.edu/extension/

For historical cotton/soybean insect newsletters:
http://www.clemson.edu//extension/agronomy/cotton1/newsletters.html

Sincerely,

Jeremy K. Greene, Ph.D.
Professor of Entomology

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